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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/885,576	06/20/2001	Charles P. Lin	910000-2017	3973

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EXAMINER

FINEMAN, LEE A

ART UNIT PAPER NUMBER

2872

DATE MAILED: 02/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/885,576

Applicant(s)

LIN ET AL.

Examiner

Lee Fineman

Art Unit

2872

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A-SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 December 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 10 December 2002 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

This Office Action is in response to an amendment filed 10 December 2002 in paper number 8 in which claims 1, 6, 8, 15-17 and 19 were amended and claims 20-25 were added.

Claims 1-25 are pending.

Drawings

1. The proposed drawing correction and/or the proposed substitute sheets of drawings, filed on 10 December 2002 have been approved. A proper drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The correction to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

1. Claims 15, 17-18, and 21-22 are rejected under 35 U.S.C. 102(e) as being anticipated by Hang et al., U.S. Patent No. 6,121,603.

Regarding claims 15, 17-18, and 21, Hang et al. discloses a method for decoding a scrambled image formed by an incoherent fiber bundle in a microscope (figs. 6A, 6B, column

10, lines 10-26) insertable into a body (in so far as it is inserted into a body of air surrounding the sample) comprising the steps of raster scanning, which is a spatially coded pattern, a focused light spot onto one end of the fiber bundle and sequentially reading out a corresponding fiber at the other end of the bundle and constructing a map of the first and second ends, whereby an image formed by light remitted into the second end can be unscrambled by the mapped relationship of the first and second ends (column 11, lines 1-12).

Regarding 22, Hang et al. further discloses a color-coded line pattern when producing the image on a display device (column 11, lines 13-27).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3, 5-6, 8-9, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hang et al., U.S. Patent No. 6,121,603 in view of Richards-Kortum et al. U.S. Patent No. 6,370,422 B1.

Regarding claims 1-3, Hang et al. discloses a confocal microscope (fig. 6A) with a probe section insertable into a body and imaging section (column 10, lines 10-26) with an flexible incoherent fiber optical bundle in at least one of the sections (79') and wherein the imaging section comprises a line scanning means (fig. 3B) that scans across a proximal end of

Art Unit: 2872

the element (Ob_2). Hang et al. discloses the claimed invention but is silent as to whether the probe is a remote probe specifically for confocal imaging of tissues at locations within the body in place of an endoscope. Richards-Kortum et al. teaches a confocal microscope (fig. 2) where the fiber bundle probe is a remote probe for confocal imaging of tissues at locations with the body in place of an endoscope (column 10, line 65-column 11, line 21). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention to make the probe of Hang et al. a remote probe for confocal imaging of tissues at locations with the body in place of an endoscope as suggested by Richards-Kortum et al. to be able to observe human or animal tumors (Richards-Kortum, column 9, lines 7-26).

Regarding claims 5-6, 8-9 and 13, Hang et al. further discloses an objective lens (80) at the distal end of the element (Ob_1) for focusing a laser beam (30) in the region of interest and where the incoherent fiber bundle (79') between a light manipulation section (32, 75, 73, and 77) and the objective lens (80) scrambles light in that spatial individual fibers at one of the ends of the bundle are randomly scrambled or scrambled in a prescribed pattern relative to that at the other end (column 11, lines 1-12).

Regarding claim 14, Hang et al. discloses the claimed invention except for each end of the fiber bundle being index matched via a window material. Richards-Kortum et al. teaches a confocal microscope with each end of the fiber bundle being index matched via a window material (column 5, lines 35-53). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to index match the ends of the fiber bundle of Hang via window material to reduce reflection.

4. Claims 4, 7, 11, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hang et al. in view of Richards-Kortum et al., as applied to claims 1 and 6 above, and further in view of Harris, U.S. Patent No. 5,323,009.

Hang et al. in view of Richards-Kortum et al., as applied to claims 1 and 6 above, discloses the claimed invention except for the microscope further comprising a slit aperture disposed in the path of light by scanned across the proximal end of the fiber. Harris teaches a confocal microscope (fig. 3) with a slit aperture (86, 87) disposed in the path of light scanned across the proximal end of the fiber. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use a slit aperture with the confocal microscope of Hang et al. to block returning light from the out-of-focus parts of the specimen (column 5, lines 17-21).

Allowable Subject Matter

5. Claims 16, 19, 20, and 23-25 are allowed.

6. Claims 16, 19, 20, and 23-25 are allowable over the prior art for at least the reason that the prior art fails to teach and/or suggest “the step of decoding the scrambled image formed by said first fiber bundle with a second incoherent fiber bundle” as set forth in the claimed combination.

Hang et al., U.S. Patent No. 6,121,603, discloses a method for decoding a scrambled image formed by an incoherent fiber bundle comprising the steps of raster scanning, which is a spatially coded pattern, a focused light spot onto one end of the fiber bundle and sequentially

Art Unit: 2872

reading out a corresponding fiber at the other end of the bundle (column 11, lines 1-12) as claimed but does not teach decoding the image with a second incoherent fiber bundle.

Response to Arguments

7. Applicant's arguments filed 10 December 2002 have been fully considered but they are not persuasive.

Applicant argues that Hang et al. does not disclose or suggest that the probe section is "insertable into a body." The examiner disagrees. Merriam-Webster's Collegiate Dictionary, tenth edition, states that a body is a mass of matter distinct from other masses, e.g. a body of water. In Hang et al., the sample object (52) is clearly a body distinct from the probe as well as from a body of air around it. The probe is clearly inserted at least into a body of air if not the sample object as well. When the applicant amended claims 1 and 6 to further define the body to have tissue, new ground(s) of rejection were necessitated (see 35 USC 103 rejections).

8. It is noted by the Examiner that the objections to the specification and claims made in the previous Office Action have been withdrawn due to amendment by the Applicant.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO**

Art Unit: 2872

MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lee Fineman whose telephone number is (703) 305-5414. The examiner can normally be reached on Monday - Friday 7:30 - 4:00.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cassandra Spyrou can be reached on (703) 308-1687. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4900.

LAF

LAF

February 20, 2003


MARK A. ROBINSON
PRIMARY EXAMINER